

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**  
Saha *et al.*

**Attorney Docket No.**  
61169.00043 (P-2944)

**Application No.:** 10/728,496

**Group Art Unit:** 2624

**Filed:** December 5, 2003

**Examiner:** Bernard Krasnic

**Title:** Method for Measuring Structural Thickness from Low-Resolution Digital Images

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Declaration of Bryon Gomberg and Inventors under 37 C.F.R. §1.131**

I, Bryon Gomberg, with the support of my co-inventors, declare that:

1. I am a named and true inventor of U.S. Patent Appl. 10/ 728,496, filed December 5, 2003, claiming an effective filing date of December 5, 2002, when U.S. Provisional Application 60/431,129 was filed, the content of which was incorporated into the present application in its entirety.
2. It is my understanding that the United States is the only country in the world that has a “first to invent” law. All other countries use “first to file” laws where the first party to file a patent application on a new invention will generally be the one that gets the patent. In the United States the assertion that one is “first to invent” must be supported by solid, verifiable records of the date of invention, followed by diligent pursuit. Verifiable records may be by: 1) records that are understood and witnessed by unbiased third parties that can and will testify about them in court, 2) contemporaneously prepared (or collected) business records that are believable and that you (or their preparers) can believably swear by, and 3) records that are held by an unimpeachable source (such as the now-ended disclosure program at the U.S. PTO).
3. The Patent Examiner has cited my 2002 Doctoral Dissertation (“In vivo magnetic resonance based virtual bone biopsy”) at the University of Pennsylvania as prior art under §103(a) against the patentability of certain claims of our invention.

4. My Dissertation was submitted in August 2002, and the earliest date listed on-line for its publication is November 2002 (see attached printout), although I do not think the actual publication occurred until 2003.

5. As I further understand it, 35 U.S.C. §103(a) states that “A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title.” In turning to 35 U.S.C. §102(a), an Applicant is entitled to a patent unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. However, 35 U.S.C. §103, would not apply to my invention as compared to my Dissertation for the purpose of establishing a priority date since the cited work in my thesis was done in collaboration with my co-inventors, and clearly it could not have been included in my thesis, unless or until, we had previously conceived of the invention prior to the cited thesis publication date in 2002.

7. Our present invention was at least in part based upon the manuscript by the inventors, PK Saha, FW Wehrli, and BR Gomberg, entitled “Fuzzy distance transform - theory, algorithms, and applications,” *Computer Vision and Image Understanding*, 86:171-190 (2002), which was submitted in provisional filing 60/431,129. As stated on page 171 of the printed publication, the manuscript was received by the journal on November 5, 2001, showing that the work encompassed by the manuscript and by the present application was completed at least by November 5, 2001, long before the publication of the Gomberg dissertation, even though the journal article was not accepted until September 27, 2002, also as stated on page 171 of the published paper (attached hereto).

8. Diligent and continuous work on this invention is demonstrated by the submission of the manuscript of paragraph 6, above, with an Invention Disclosure Form to the University of Pennsylvania, Center for Technology Transfer on August 5, 2002 (copy attached hereto).

9. In addition, we diligently worked on preparing and filing the patent application on December 5, 2002 (constructive reduction to practice), which closely followed the effective publication date of my Dissertation in November 2002.

10. Although diligence is only required from the publication date of the Dissertation until the date of constructive reduction to practice, our continuing diligence from the November 5, 2001 (actual reduction to practice) submission date is shown in the following relevant additional prepared and published manuscripts: PK Saha, FW Wehrli, BR Gomberg, and M Takahashi, "Trabecular bone thickness from *in vivo* MRI using fuzzy distance transform," in *Proc. of Internat'l Soc. for Magnetic Resonance in Medicine*, 146, Honolulu, HI, Feb. 2002; and PK Saha, BR Gomberg, and FW Wehrli, "A novel theory and algorithm of fuzzy distance transform and its applications," in *Proc. of SPIE: Medical Imaging*, San Diego, CA, 4684, 134-145, June/July 2002, as well as a lecture by invitation by PK Saha, BR Gomberg, and FW Wehrli, "Digital topological analysis of trabecular bone micro-MR images," *Workshop on Digital Topology*, City College of CUNY and the Graduate Center of CUNY, New York, NY, USA, organizers: GT Herman, Graduate Center, CUNY, R Kopperman, City College, CUNY, March 22-23, 2002.

11. Since the November 2002 publication date of the cited Dissertation follows the first conception and disclosed actual reduction to practice of the invention in 2001, and since the effective constructive reduction to practice date of December 5, 2002 (filing date of our provisional application) follows the November 2002 publication of the Dissertation *by less than 1 year* - the cited Dissertation is not effective "prior art." The cited published Dissertation did not anticipate the present patent application, since that work was actually part of the subject invention. Consequently, publication of my own Dissertation is not proper "prior" art against this invention on which I am a named inventor.

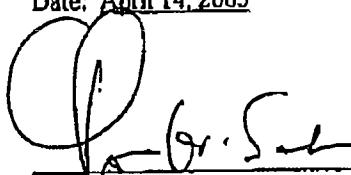
12. Claims 22 and 24 of our invention are not obvious over my Dissertation, since in that Dissertation, I disclosed parts of our invention, which at the same time were encompassed within the subject matter of provisional application 60/431,129.

13. Each statement made herein is supported by my co-inventors, Drs. Wehrli and Saha.

14. I, and my co-inventors, each hereby declare that all statements made herein of our own knowledge are true, and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18

U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: April 14, 2009



Punam K. Saha



Bryon Gomberg



Felix W. Wehrli